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CENTRAL INTELLIGENCE AGENCY

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SUBJECT	Layout of Svoboda Electro-Mechanical Plant	DATE DISTR.	29 June 1955	
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REPORT

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THIS IS UNEVALUATED INFORMATION

General

1. The Svoboda Electro-Mechanical Plant (Svobodinskiy Electro-Mekhanicheskiy Zavod - SEMZ) was located approximately 30 kilometers north-northwest of Kursk, on the main railroad line from Moscow to the Crimea, in the north-central part of the town of Svoboda (N 51-59, E 36-17), USSR.¹ The six main buildings of SEMZ were built in the 15th and 16th centuries and were used at that time for the Russian-Ukrainian Fair. Svoboda was formerly called Korennaya Pustyn. Until 1946, these buildings were kept up as national monuments. The Council of Ministers, USSR, decided at that time to renovate these six buildings, build additional ones, and utilize the site for an electro-mechanical plant. Equipment for this plant was received from some dismantled German Siemens Plant. This equipment was, for the most part, old and heavily damaged during dismantling and transportation. In addition to this, the plant received new, Soviet equipment.
2. The plant management was entirely civilian. The plant was under the jurisdiction of the Ministry of Electrical Industries (see page 8 for diagram of the SEMZ administration). The plant director, Mikhail Boklag, directed plant operations until June 1954, and is probably still there.² He was charged with overall operation of the plant, which was directly subordinate to the Minister of Electrical Industries in Moscow. Boklag, as director of the plant, could only be reprimanded or relieved of his post by the minister. However, he received production orders from the Chief Directorate of Electric Machine-Building Industry (GlavElectroMashProm).

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3. The Svboda Electro-Mechanical Plant employed 650 workers as of 1 January 1950 but expanded its labor force to 1200 workers after building a new electro power plant and slightly expanding the original buildings. Work was carried out in three shifts: 0700 to 1500 hours; 1500 to 2300 hours; and 2300 to 0700 hours. Office workers in the plant directorate building worked from 0800 to 1700.
4. SEMZ production consisted entirely of synchronous generators having the following power: 15, 25, 35, 60, and 100 kilovolt-amperes, and starting apparatus for these generators. There were two types of generators: those having Selenium rectifiers and those with direct-current exciters. [redacted] high-frequency synchronous generators, having a frequency of 200 hertz being produced. Yearly production amounted to 12,000 machines of the above type, for a total sum of 150 million rubles per year. The plant delivered its products to supply collection points of the Ministry of Electrical Industries located in Kursk, Kharkov, Moscow, and other large cities. These supply collection points, in turn, dispatched the products to the various kolkhozy and sovkhozy, as required.
5. All raw material was received from supply depots according to quarterly plans that the Ministry of Electrical Industries drew up for the plant. These supply depots were located in Moscow, Kharkov, Kursk, and other large cities. [redacted] amount of coal used yearly at 6,000 to 7,000 tons. [redacted] there were constant supply shortages toward the end of each month. Special expeditors, nicknamed "Telkachi", were listed on the plant payroll as workers in various shops. However, they did not ever perform these jobs. Their sole duty consisted of obtaining required material in any way possible, i.e., bribery, pleading, cajoling, threatening, etc. [redacted] all plants had this system and that it was the only really effective way of getting material that was badly needed.
6. The nearest railroad to the plant was six kilometers away. No railroad entered Svboda because of the difficult terrain just outside of the town. Deep gullies and ravines would make a railroad very difficult and expensive to construct. SEMZ, therefore, utilized its fleet of trucks to haul raw materials and finished products between the plant and the Svboda Railroad Station, where SEMZ had a supply dump for lumber, coal, and metal.
7. SEMZ had its own electric power plant capable of generating 1,500 to 2,000 kilowatts. It also had a temporary electric power plant which could generate power up to 550 HP. This power plant had the following equipment: Swedish-made "Polar" diesel, 250 HP; two Soviet-made diesels, each 150 HP. The new power station, built in 1954, had four Czech-made locomobiles, each capable of generating 500 HP. These locomobiles were coal fed.
8. The plant had two light automobiles type GAZ-67 and 15 trucks of type GAZ-51, ZIS-5, and ZIS-152. In addition to these, there were six to eight horses, used mainly for pulling the mobile fire pumps. The rayon fire brigade was located on the territory of the plant. Fire engines had been ordered but had not yet been received. All fire-wagons were horse-drawn. Two men were on duty.
9. Since this plant was located in an agricultural district, the average wages were relatively low because of the fact that farm produce could be bought much cheaper than in larger towns. Wages for different levels of work and responsibilities were as follows:

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<u>Position</u>	<u>Rubles per month</u>
Plant director.....	1500
Chief engineer.....	1500
Chief bookkeeper.....	1200
Shop chiefs.....	900-1000
Engineer technicians (average)...	600
Administrative personnel.....	400
Laborers (average)	350-400

10. The morale of the plant personnel was average. It greatly improved after construction was completed on shower rooms and dining hall. A two-week paid vacation also helped morale, and conditions improved greatly after 1950 when most of the construction had been completed and working conditions were considered generally fairly good. The health condition of the workers was also generally high. The plant did not have its own polyclinic, although one was planned. Workers utilized the rayon hospital, which was subsidized by the plant to take care of its personnel. SEMZ built a worker's settlement which housed 150 families in Svoboda. Housing was adequate according to Soviet standards.

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11. [] no cases of actual sabotage, although every time there was a breakdown of machinery, the Party and government suspected the workers of sabotage since this area had been under German occupation. There was much pilfering of company property, however, and that was practically impossible to halt. The plant was guarded at night by two guards armed with shotguns; one guard was located at the pass office, the other made the rounds of the plant grounds. During the day, there were two guards, both at the pass office; a woman guarded the entrance and a man made out passes. Guards watched mainly for thievery by the workers and fires. There was a total of eight to ten guards. The plant grounds were surrounded by a brick and concrete slab fence 2.5 meters high.

12. Plant Layout (See sketch on page 9)

12. On page 9 is a layout sketch of the Svoboda Electro-Mechanical Plant. The following paragraphs comprise a list and description of the various buildings making up this plant.

13. Building No. 1-a brick and stucco, one-story structure, 80x21x13 meters, with a monitor-type, low-pitched roof covered with maroon-colored sheet iron. The building had three bays running its length. The two side bays were five meters wide. The inside height of the building was 12 meters. The side bays were separated from the center bay by brick columns spaced every five meters. There were fifteen such columns on each side of the center bay. The exterior walls of the building were one meter and more in thickness (see sketch on page 10 for end view of buildings No. 1 through No. 6). Building No. 1 contained the following shops and machinery (see sketch on page 11 for plan layout of building):

- a. Plant boiler shop - contained six water boilers, each having a heating surface of 36 or 45 square meters, and one steam boiler with a capacity of two tons of steam per hour at 12 atmospheres of pressure. The water boilers were utilized for various technological needs of the plant.
- b. Forge shop - contained two pneumatic hammers, one weighing 150 kilograms, the other 250 kilograms. There was also a furnace for heating metal, anvils, and various other technological equipment.

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14. Building No. 2 - construction identical to the building described in paragraph 13, see sketch on page 12). This building contained the following shops and machinery:
- a. Mechanical repair shop. All repair work of lathes and other machine equipment was conducted in this shop. Following is a list of the largest pieces of equipment:
- (1) Planers having a longitudinal movement of three meters; the width of the bench was one meter.
 - (2) A double support, transverse planing machine with a carrier movement of 1.2 meters.
 - (3) Facing lathe, having a center height of 1.5 meters.
 - (4) Numerous turning lathes, having center heights from 100 millimeters to 300 millimeters and a distance between the centers of from one to three meters.
 - (5) Various cylinder-and cone-grinding machines of the same sizes as (4) above.
 - (6) Various vertical and horizontal milling machines with table sizes of approximately 300x1000 millimeters and 500x1500 millimeters.
 - (7) Surface grinding and vertical grinding machines of unknown sizes.
 - (8) Vertical boring and turning lathes having a face plate diameter of 0.5 to 1.5 meters.
 - (9) Drill presses having a drill diameter of from 10 to 35 millimeters.
 - (10) In the center bay was a crane which had a lifting capacity of five tons. The crane was operated from the floor.
- b. Instrument shop - the function of this shop was to turn out instruments, dyes, and various technological equipment. It had the following machines:
- (1) Turning lathes, center height from 100 to 400 millimeters, distance between centers from 0.5 meters to 3 meters.
 - (2) Vertical boring and turning lathes, with faceplate diameters of 1 to 1.5 meters.
 - (3) Vertical grinding machines, of the same size as the lathes in (2) above.
 - (4) Milling lathes, with table dimensions of 200x500 millimeters, 250x750 millimeters, and 500x1500 millimeters.
 - (5) Universal milling machines of the same dimensions as the lathes in (4) above.
 - (6) Cylinder-and cone-grinding machines, with a distance between centers of from 0.5 to 3 meters, center height from 100 to 200 millimeters.

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- (7) Transverse planing machines, with carrier movements of 250 millimeters, 500 millimeters, and 750 millimeters.
 - (8) Drill presses, with drill diameters ranging from 6 to 50 millimeters. There were the following types of drill presses: bench drill, core drill, and radial drill.
 - (9) Various grooving, key slotting, shearing, and other special instrument lathes.
 - (10) Facing lathe, with center heights of up to one meter.
 - (11) The side bay of the shop had a locksmith shop where various instruments such as dyes and technological apparatus were assembled and made. This shop had a crane with a lifting capacity of 1.5 tons.
15. Building No. 3 -- construction identical to the building described in paragraph 13 (see sketch on page 13). This building contained the following shops and machinery:
- a. Stamping shop -- The function of this shop was to prepare, stamp, and paint "dynam" iron. This shop had the following machines:
 - (1) Eccentric (off center) presses, from 3 to 100 tons.
 - (2) Hydraulic presses from 10 to 100 tons.
 - (3) Friction presses up to 50 tons.
 - (4) Various automatic groove-stamping machines.
 - (5) Various shears for cutting sheet metal.
 - (6) Lathes for removing burrs from stamped iron parts.
 - (7) A machine for lacquering and drying iron.
 - (8) Two cranes each with a capacity of 1.5 tons.
 - b. Apparatus branch - a branch of the stamping shop, 15 a., above. This branch assembled shunt regulators for selenium rectifiers and other products. It also charged the poles of the generators as well as giving them compression.
6. Building No. 4 - construction identical to the building described in paragraph 13 (see sketch on page 14). This building contained the following shops and machines:
- a. Mechanical shop - mechanically finished all generator parts and manufactured fastenings, i.e., belts, nuts, and screws. The following machines, which were of the same size as the machines described in paragraph 14b, were located in this shop:
 - (1) Turning lathes having the following dimensions: center heights from 100 to 300 millimeters, with a distance between centers of from 500 millimeters to 2000 millimeters.
 - (2) Various revolving semi-automatic machines.
 - (3) Revolving automatic machines having rod diameters of 4, 6, 8, 10, 12, 16, and 24 millimeters.
 - (4) Vertical boring and turning lathes with faceplate diameters from 0.5 to 2 meters.

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- (5) Cylinder-and cone-grinding machines.
- (6) Slot milling machines.
- (7) Surface grinding machines.
- (8) Boring machines.
- (9) Milling machines.
- (10) Various other special technological lathes.
- (11) Two cranes each with a capacity of 1.5 tons.

7. Building No. 5 - construction identical to the building described in paragraph 13 (see sketch on page 15). This building had numerous small machines to perform the required jobs in the above shops. 50X1
 It had the following shops:

- a. Section for pressing and assembling one-half-millimeter-thick iron sheets for generator stators. 50X1
- b. Winding branch.
- c. Assembly branch.
- d. Painting branch.
- e. Testing station.

8. Building No. 6 - construction identical to the building described in paragraph 13 (see sketch on page 16). This building had the casting shop and the following machinery:

- a. Two cupola furnaces capable of producing 1.5 tons of metal per hour.
- b. A crusher-roll mill to crush foundry loam.
- c. A sifting machine to sift the foundry loam.
- d. Pneumatic forming machines for forming small parts.

9. Smashing hammer - a manually-operated machine, weighing three tons. The immediate area was enclosed by a concrete wall two meters high. Various metal parts were brought in for smashing to facilitate handling, and were then smelted or sold as scrap metal. This was a relatively crude, "home-made" apparatus.

10. Garage - brick, one-story building, 60x20x4 meters. It had a low-pitched, iron, gable roof.

11. Water supply system - brick building 39x40 meters. The building was not yet finished 50X1
 following additional information: The building would contain a reservoir and a chemical purification system because the water contained too much lime and, therefore, was not suitable for boilers.

12. Plant administration building - brick, stucco, two-story building, 50x31x6 meters. It had a low-pitched, sheet-iron, gable roof. On the first floor was a movie theater and the plant dining hall. This was considered to be a temporary arrangement until a permanent theater could be built. The second floor housed the SEMZ administration. (See pages 17 and 18 for a detailed layout of the entire building and offices therein).

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23. Pass office - an adobe, one-story building, 5x4x2.5 meters. It had a low-pitched, sheet-iron, shed roof.
24. Temporary power plant - a brick, stucco, one-story building, 30x20x5 meters. The plant had a sheet-metal, low-pitched, gable roof (see page 19).
25. Fire station - a brick, stucco, one-story building, 25x15x6 meters. The station had a low-pitched, iron, gable roof. Horse-drawn fire wagons were located in the station.
26. Coal storage area - an area 63x24 meters. The area was surrounded by an industrial wire fence approximately three meters high.
27. Raw material storage building - a brick, one-story building, 52x28x3 meters. It had a low-pitched, iron, gable roof.
28. Finished products storage building - a brick, one-story building, 44x25x3 meters. The building had a low-pitched, iron, gable roof.
29. Storage of raw cast iron and ready casts - an area 54x28 meters. This area was surrounded by an industrial wired fence approximately three meters high. It was roughly divided into two sections, one for storage of iron to be cast and the other of ready castings.
30. New power plant - a brick, stucco, one-story building, 90x30x8 meters. The plant had a low-pitched, iron, gable roof. It had four Czech-made locomobiles.
31. Residence - a brick, one-story building, 25x15x4 meters. It had a low-pitched, iron, gable roof. The building housed the workers of the Industrial Trade School.

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1. [] for pinpoint location of the plant.
2. [] Comment: Further information relative to management, personalities, and production will be published in a forthcoming report.

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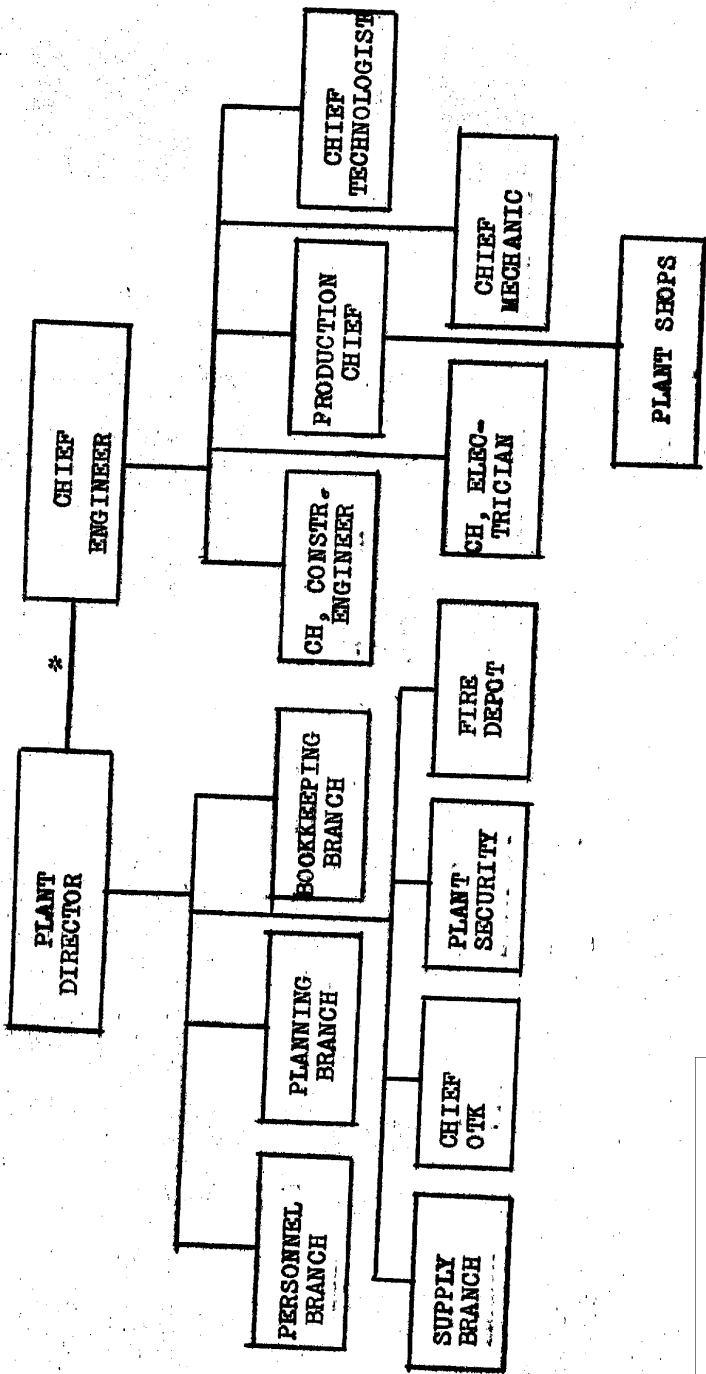
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Diagram of Administration of
Electro-Mechanical Plant (SEMZ), Svoboda, USSR

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the plant director
and the chief engineer shared equal authority.

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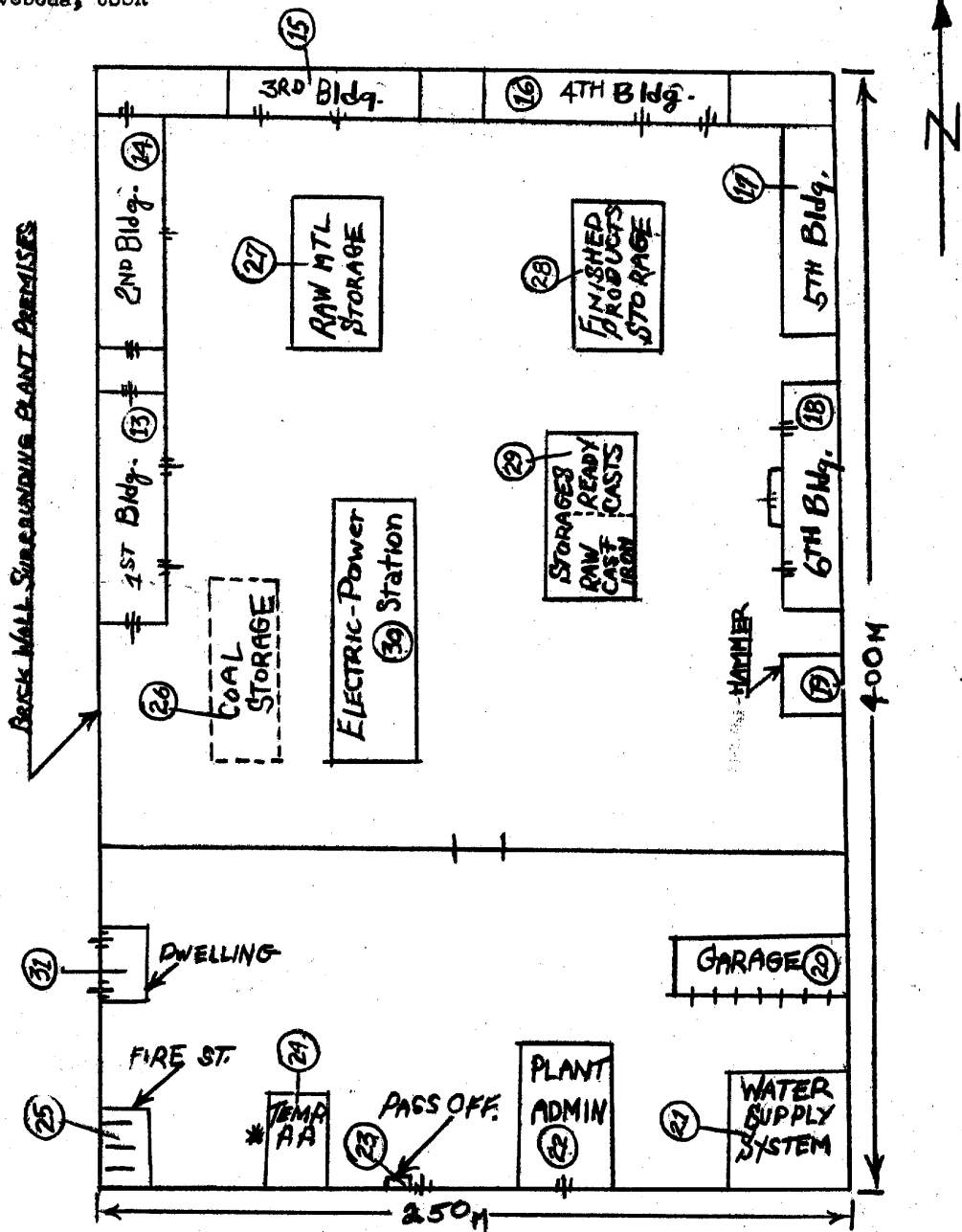
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Sketch of Electro-Mechanical Plant
at Svoboda, USSR



*P.P = POWER PLANT

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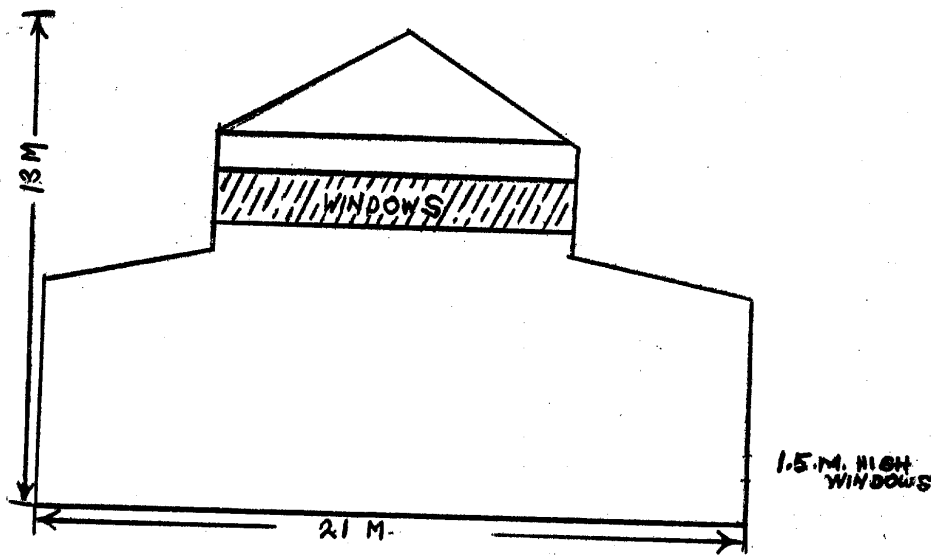
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Sketch of Shop Building
(Electro-Mechanical Plant) in Svoboda
(N 51-59, E 36-17)

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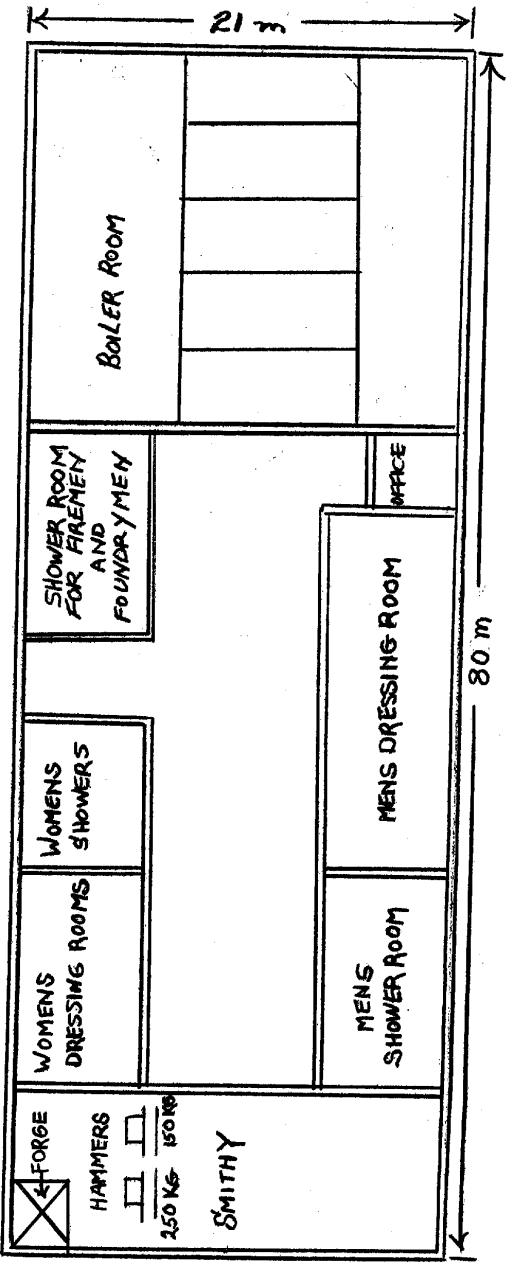
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Building #1 - Floorplan Layout



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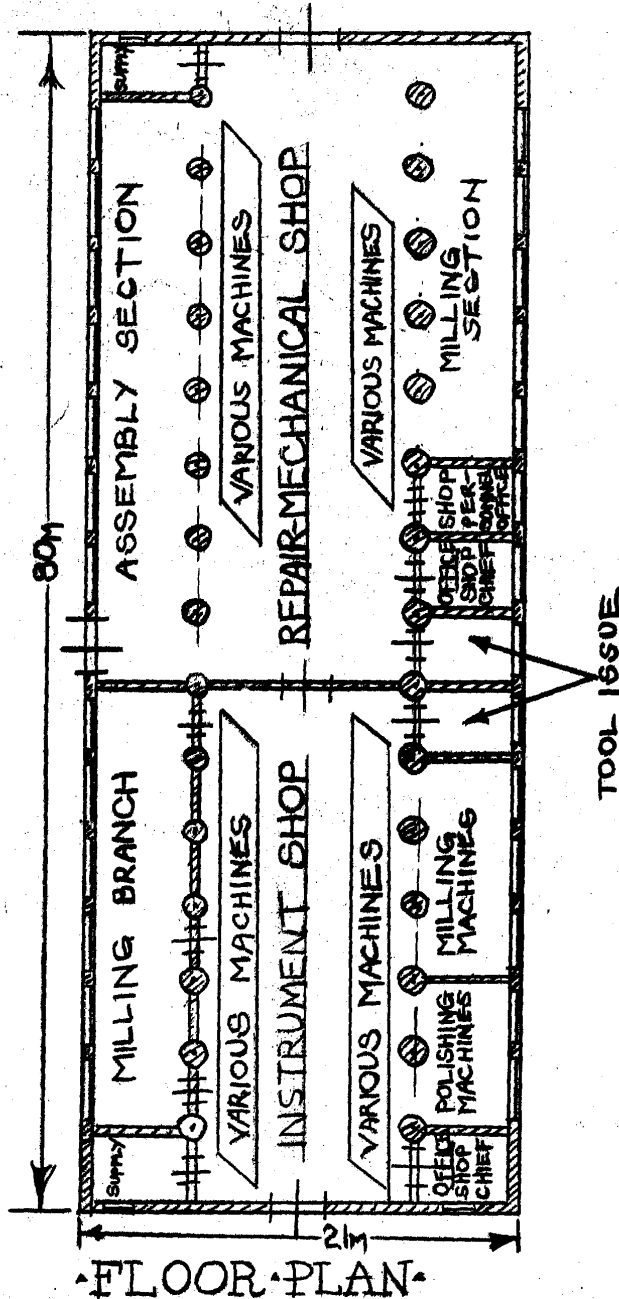
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Sketch of SEMZ Building #2, Floor Plan

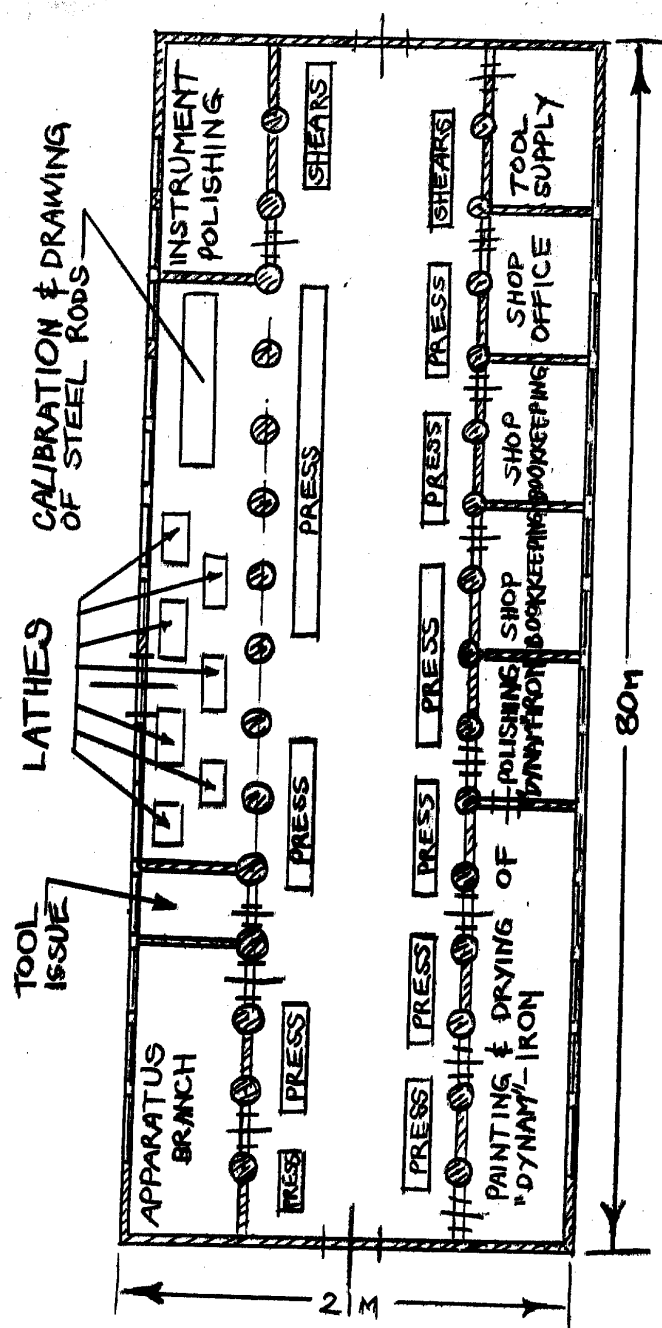
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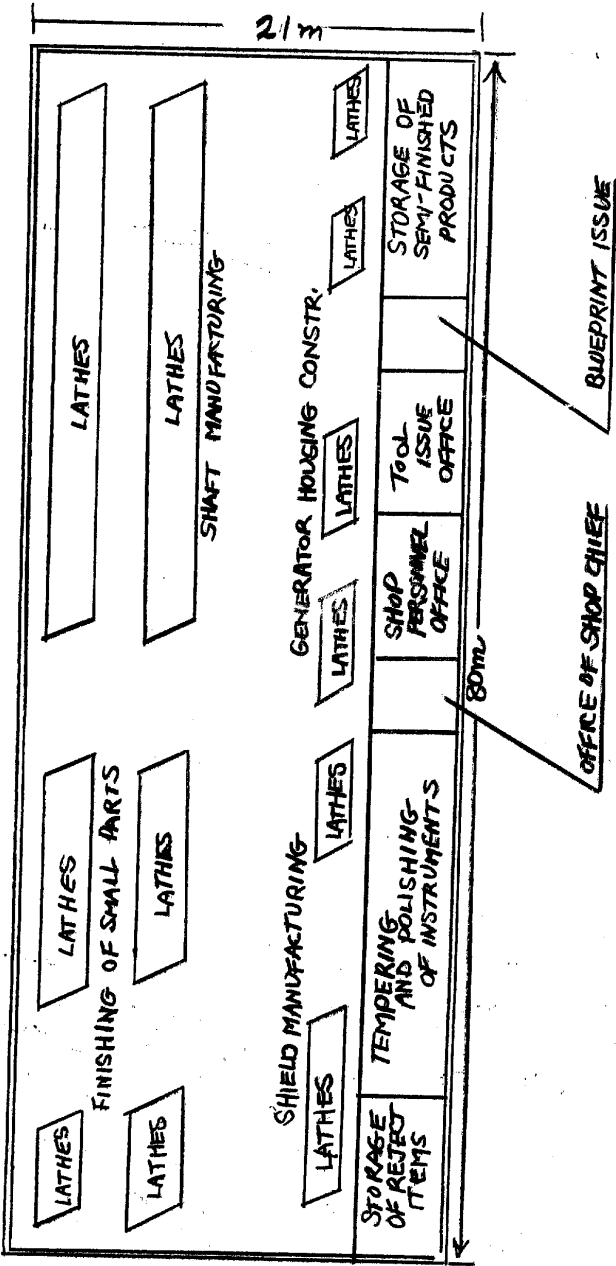


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Building #4, Floor Plan Layout



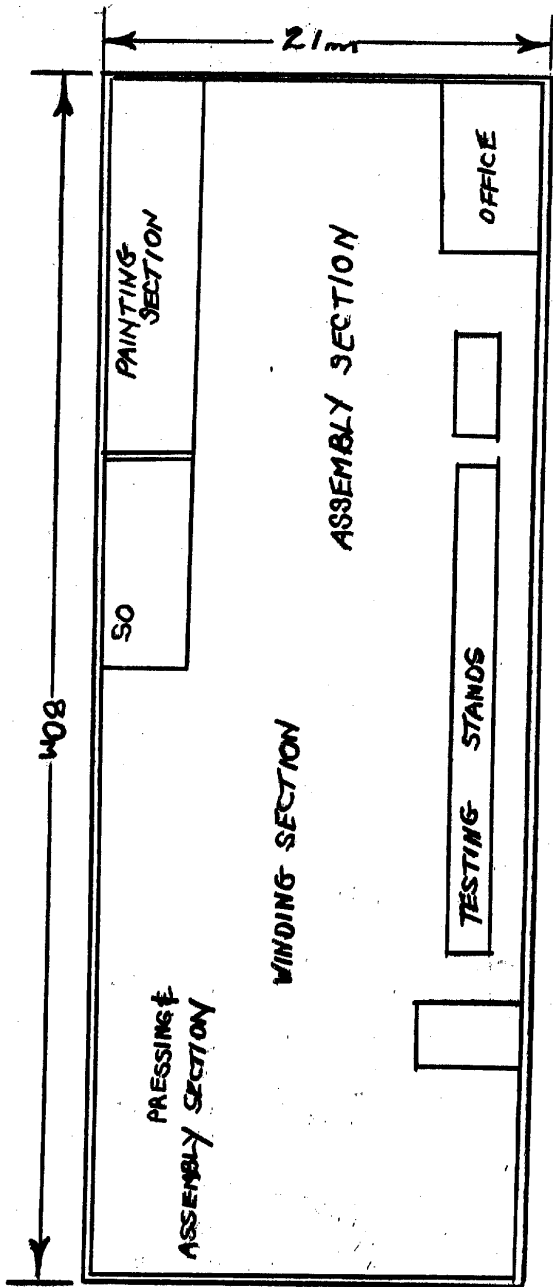
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Building #5, Floor Plan Layout



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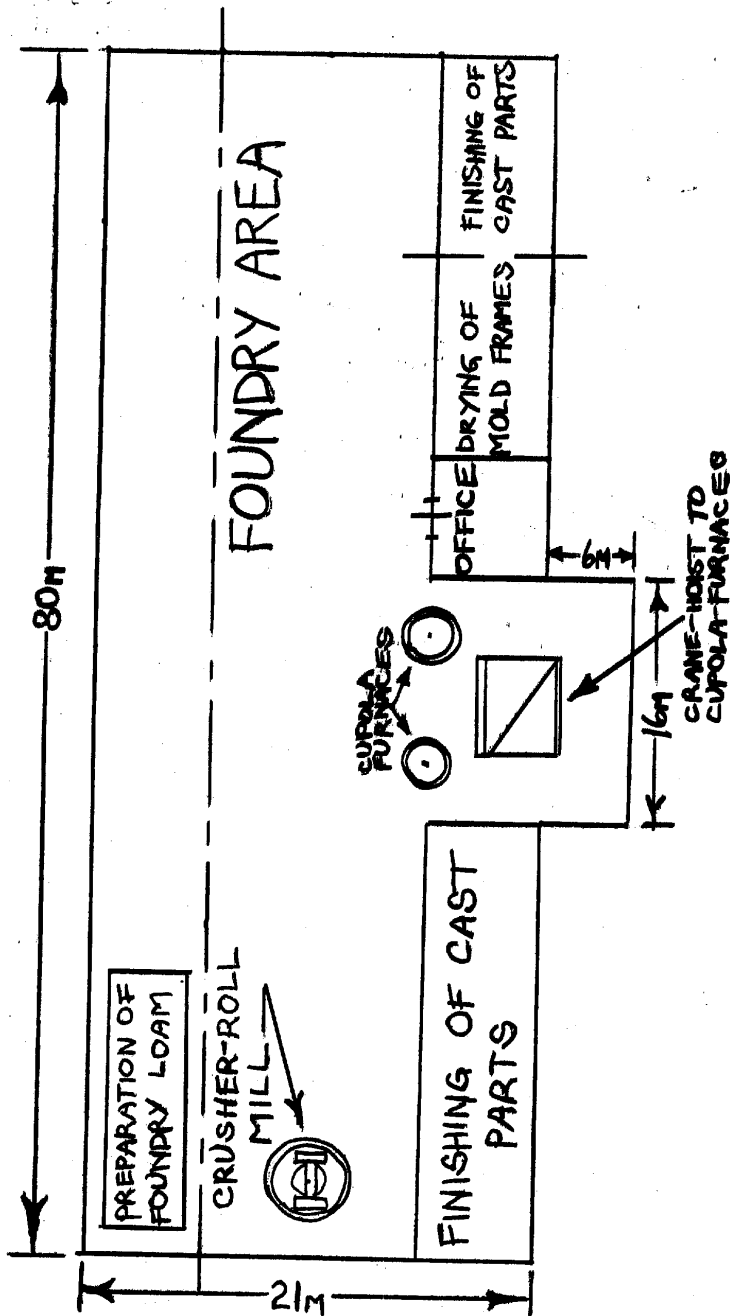


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Sketch of SEMZ Building #6, Floor Plan

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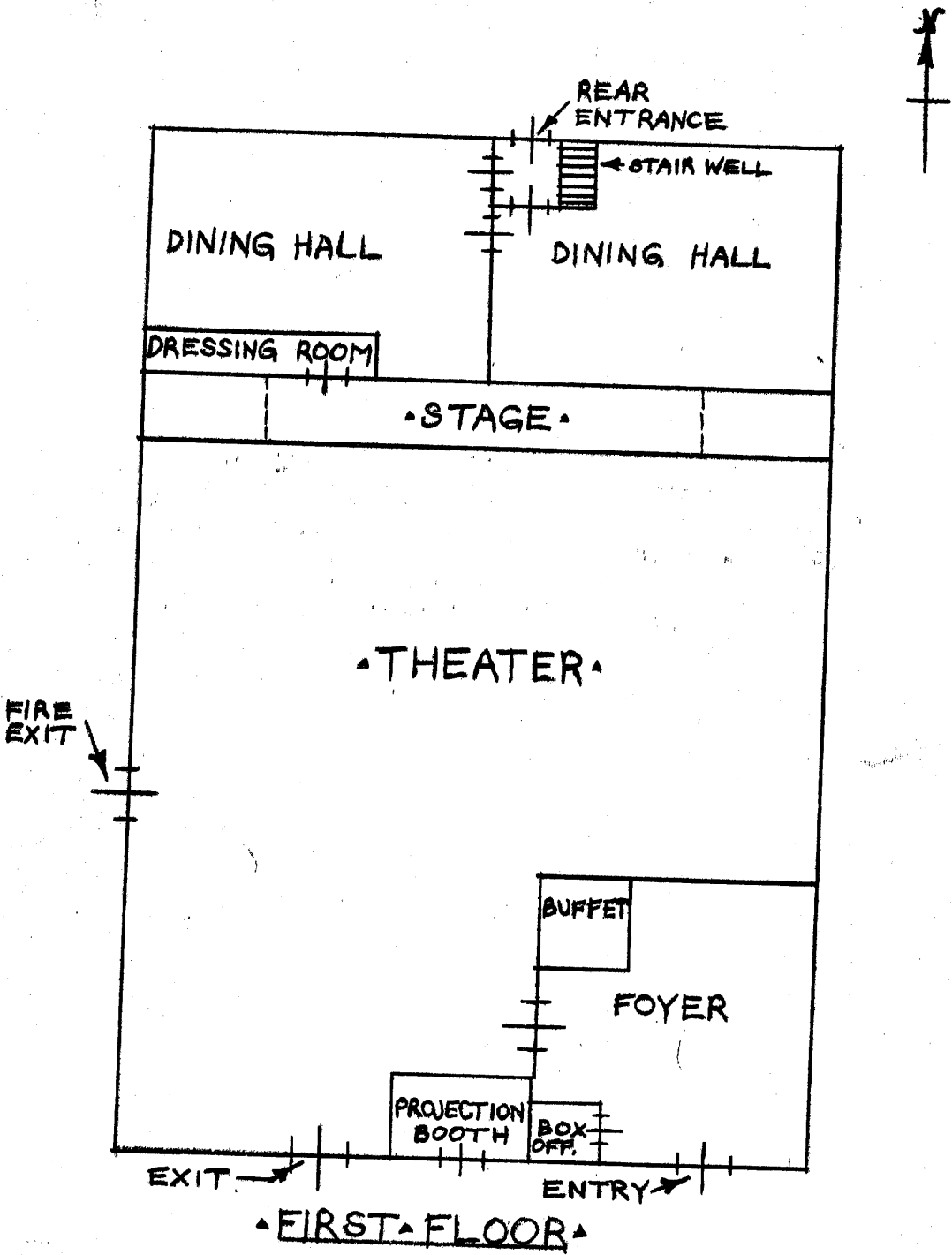


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Sketch of Svoboda Electro-Mechanical Plant
Administration Building

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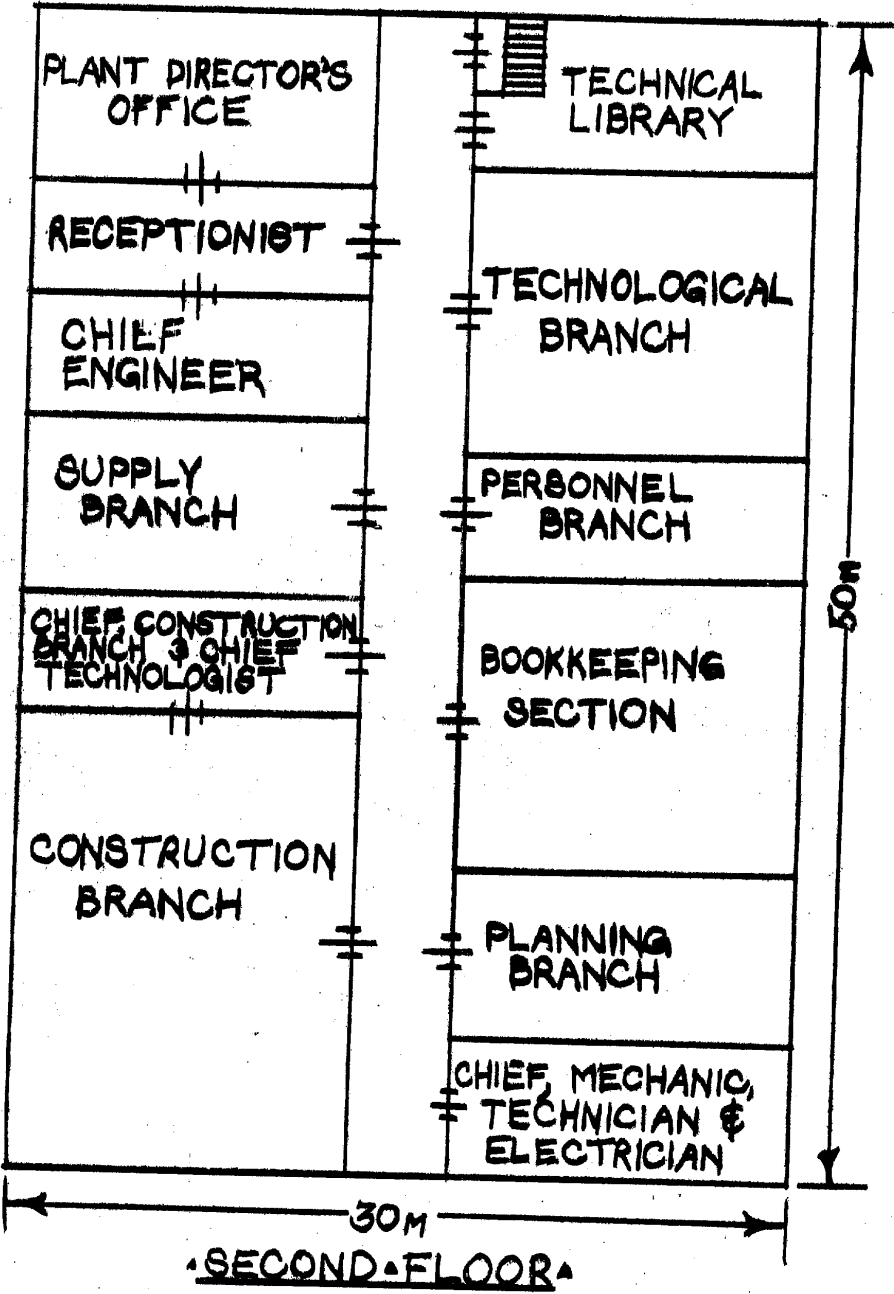
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Sketch of SEMZ Administration Building

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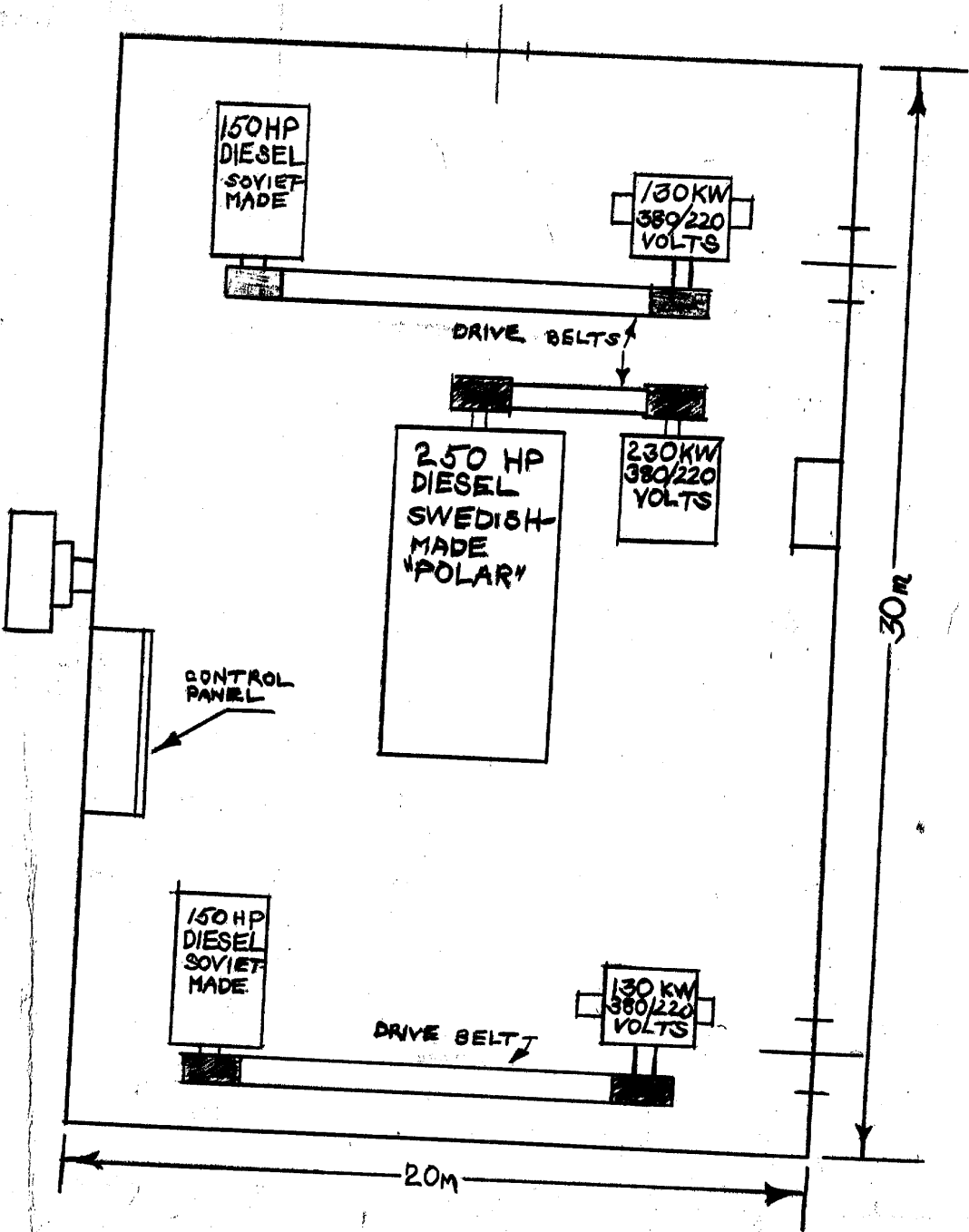
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Sketch of Temporary Electric Power
Station at SEMZ

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